

REMARKS

Claims 1-3 and 5-7 stand rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent 6,493,122 (Degura). Applicant traverses this rejection.

As recited in independent Claim 1, Applicant's invention is directed to an optical space transmitter having a light source, an optical system, a temperature detector, control means, and angle correcting means. The optical system sends out a light beam emitted from the light source as a transmission light beam with an angle of expansion. A temperature detector detects the internal temperature of the optical space transmitter. The control means controls the optical space transmitter such that the angle of expansion increases when the detected internal temperature rises. Angle correcting means corrects the angular displacement between the light beam to be transmitted and a received light beam.

Degura is also directed to an optical space communication apparatus. The Office Action states that column 4, lines 18-27, of that patent discloses the control means of the present invention. That section of Degura describes that, on the basis of "detection information", beam transmission angle control unit 25 drives beam transmission angle change means 14 to change the transmission angle of the light beam. Separately, Degura describes a temperature detection unit 24. Applicant submits, however, that the transmission angle discussed in Degura is not changed on the basis of detection information from the temperature detection unit 24. Rather, the "detection information" referred to in column 4, line 25, refers to information from the optical axis angular error detection unit 19 (column 4, lines 19-20). Detection unit 19 detects an angular error between the light transmission direction of the light reception unit and the optical path of the reception light from an opposing apparatus. Thus, the transmission angle is not changed based on temperature detection.

Furthermore, Applicant submits that the “transmission angle” of Degura does not correspond to the angle of expansion of the present invention. In the present invention, the angle of expansion (i.e., divergence angle) is corrected based on detected information. Applicant submits that the correction of a transmission angle in Degura corresponds more appropriately to the “angle correction means” of the present invention, which corrects angular displacement between the light beam to be transmitted and a received light beam.

Because the section of Degura referred to in the Office Action discusses changing a transmission angle, rather than an angle of expansion on the basis of detection information, which detection information does not directly relate to a detected temperature, Applicant submits that Degura does not describe or suggest the claimed correction of an angle of expansion based on temperature detection.

Applicant acknowledges that Degura describes a temperature detection unit 24; however, that patent does not suggest that the temperature information would be used to correct an angle of expansion. Applicant notes that it is common in the art to detect a temperature of an electro-optical conversion unit in order to stabilize a laser oscillation output. This is the likely use of the temperature detection unit 24 in Degura, given the proximity of that detection unit to the electro-optical conversion unit 17 in Figure 3 of that patent.

The Office Action also states that it is inherent that lasers produce more power when heated up and this naturally leads to an increase in the angle of expansion. Regardless of whether this assertion is correct or not, the present invention is directed to controlling the angle of expansion appropriately on the basis of a detected temperature. That lasers may produce more power after heating up does not suggest the features of the present invention in which an expansion angle is controlled based on a result from a detector for detecting a temperature.

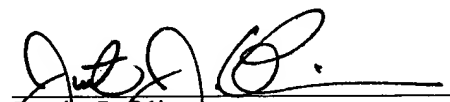
Accordingly, Applicant submits that Degura fails to disclose or suggest at least the features of a temperature detector for detecting the internal temperature of an optical space transmitter, and control means for controlling the optical space transmitter such that the angle of expansion increases when the internal temperature detected by the temperature detector rises, as recited in independent Claim 1.

The remaining claims in the present application are dependent claims which depend from independent Claim 1, and thus are patentable over the applied document for reasons noted above with respect to that independent claim. In addition, each recites features of the invention still further distinguishing it from the applied patent. Applicant requests favorable and independent consideration thereof.

For the foregoing reasons, Applicant requests withdrawal of the rejection under 35 U.S.C. § 102.

Applicant's undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 530-1010. All correspondence should continue to be directed to our address given below.

Respectfully submitted,


Justin J. Oliver
Attorney for Applicant
Registration No. 44,986

FITZPATRICK, CELLA, HARPER & SCINTO
30 Rockefeller Plaza
New York, New York 10112-3801
Facsimile: (212) 218-2200

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